

XLVI.—Two new Amphipods from the West Indies.

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[Plates XIV. & XV.]

Amphithoë megaloprotopus, sp. n.
(Pls. XIV. and XV. B.)

From *Amphithoë*, Leach, the genus *Grubia*, Czerniavski, is separated only by its possession of a one-jointed accessory flagellum on the upper antennæ. From *Microdeutopus*, Costa, Professor Della Valle distinguishes *Stimpsonella* by the single character that "the prehensile angle of the second gnathopods in the male is prolonged into a more or less notable process." Upon these precedents it is to be expected that the species now to be described will not long escape from transfer to a new generic name. It is, to be sure, a characteristic *Amphithoë*, except in one respect; but, contrary to the existing definition of that genus, it has the first gnathopods larger instead of smaller than the second. Thus it is easily distinguishable from all its hitherto known congeners, and at the same time it shows an approximation between Boeck's subfamilies of the Microdeutopinæ and Amphithoinæ, which Della Valle groups together with others in an extensive family called Corophidæ.

The new species has the body flecked all over with stellate markings, as is commonly the case in this genus.

Eyes placed on the front lobes of the head, rounded, of moderate size, black in the specimen preserved in spirit.

Upper Antennæ.—First joint long and stout, fringed with very long setæ; second joint much thinner, but not much shorter than the first, with numerous tufts of setæ; third joint short, slightly curved; flagellum imperfect, the remnant as long as the peduncle, containing twenty-three small joints.

Lower Antennæ.—Imperfect; the second and third joints short and stout; the fourth joint robust, nearly once and a half the length of the first joint of the upper antennæ.

Mouth-organs.—As will be seen from the figures these are of the usual type. This remark applies also to the second maxillæ, which were examined, but were accidentally lost before they had been drawn. The left mandible has six serrate spines in the spine-row, the right has only five; the secondary plate is strongly denticulate on the left, but very feebly on the right. The molar tubercle is partially fringed with spine-like teeth and carries a long seta. The third

joint of the palp is nearly equal in length to the first and second combined. The first maxillæ have three small setæ on the inner margin of the small inner plate *, the outer plate carries the usual ten spines. The maxillipeds are chiefly remarkable for the stout and prominent development of the chin-like base. As the figure shows, one of the palps has suffered an injury. It is noticeable that the cicatrice is in the middle of the third joint, not, as might have been expected, and as is the case with the likewise damaged lower antennæ, at an articulation.

First Gnathopods.—The side-plates are very large, much longer than deep, produced forwards so as completely to cover the mouth-organs. The second joint of the limb, attached near the hind margin of the side-plate, is directed backwards; in length it about equals the hand, but is much narrower. The front margin is channelled and distally lobed. The fourth joint has three tufts of setæ on the hind margin and a small pointed apex. The wrist is triangular, cup-shaped, scarcely longer than broad. The length of the massive hand is equal to more than twice the breadth; its margins are nearly parallel, but the front is regularly though slightly convex, while the hinder is somewhat sinuous. The palm is a little oblique, though at the end forming a right angle with the hind margin. The curved finger is stout at the hinge, and its apex very decidedly overlaps the palm.

Second Gnathopods.—The side-plates scarcely half the length of the preceding pair; the limb very similar in structure to that of the first gnathopods, except that the hand is rather shorter and rather narrower, with a much more sinuous palm, within the point of which the apex of the short much-curved finger closes down. The setæ on the rounded apical part of the hand's front margin are very long. Both pairs of gnathopods are bulky, and as the base of the maxillipeds is also thick, it seems as if there were no room for the animal to draw up its "hands" into concealment between the side-plates, as Amphipods in general are so inconveniently fond of doing. The lateral view of the specimen shows the actual undisturbed position in which the gnathopods were observed.

First and Second Peræopods.—The side-plates are similar to those of the second gnathopods, and so also are the broadly flask-shaped branchial vesicles. Neither in these nor in the following peræopods were any distinguishing features discerned, and the general character will be sufficiently seen by the figures.

* According to Della Valle the first maxillæ in *Amphithoe* are devoid of an inner plate; but this is contrary to my experience.

Pleopods.—Coupling-spines two; cleft spines six; joints of rami from seventeen to nineteen in number; the outer ramus slightly shorter than the inner and a little curved.

Uropods.—The proportions and armature are sufficiently shown in the figures.

Telson.—The breadth at the base is slightly longer than the length. There is a small apically rounded triangular piece produced beyond the two lateral apices, which appear to be constituted each by a small upturned hook. Within these points are backward-projecting setæ, and considerably above them are planted other setæ which diverge laterally.

The length of the specimen from the front of the head to the end of the peræon was three tenths of an inch, and the length of the pleon two tenths. Allowing for the overlapping of the segments, the animal when distended would probably have measured considerably less than five tenths of an inch from the head to the telson.

The specific name, meaning "with a large first foot," refers to the superiority in size of the first over the second gnathopods.

The specimen was obtained from seaweed on rocks at Antigua, and forwarded to me by the kindness of my friend Mr. W. R. Forrest.

DEUTELLA, Mayer, 1890.

In the Supplement to his 'Monograph on the Caprellidæ' Dr. Mayer defines this genus as follows:—

"Mandibular-palp three-jointed. Flagellum of the antennæ two-jointed. Rudiments of legs on the third and fourth segments, in the female those on the fourth segment being at a considerable distance from the branchiæ. On the abdomen of the male one pair of one-jointed leg-stumps."

In the following paragraph he mentions that the rudimentary legs are two-jointed and provided with numerous setæ. Assigned to the genus are the species *Deutella californica*, *Deutella venenosa*, and a third as yet unnamed. In the tabular view of the twenty-three genera of Caprellidæ which Dr. Mayer gives on page 8 of his exceedingly valuable Supplement a difficulty arises in regard to *Deutella*. For there the abdomen of the male is stated to have two pairs of leg-stumps, instead of only one pair as in the subsequent diagnosis. Moreover, the characters ascribed in the table to *Pseudoprotella* are practically the same as those given to *Deutella*, the only differences being that in *Pseudoprotella* the number of setæ on the terminal joint of the mandibular palp

is reckoned as $1 + 20 + 2$, while in *Deutella* it is $1 + x + 1$, and the position of the penes in the former genus is median, in the latter almost median. A key to facilitate the discrimination of the numerous genera is given in three different forms; but it so happens that in each of these *Deutella* and *Pseudoprotella* are grouped together, instead of being distinguished. As regards the abdomen in the two genera, the illustrations on plate v. seem to show that there is in fact no tenable distinction in this respect between them. It is otherwise with the palp of the mandibles, for its third joint in *Deutella* is armed with very few setæ, while in *Pseudoprotella* they are numerous. Yet this seems a rather precarious character on which to separate two genera. The species about to be described agrees with *Deutella* in the simple armature of the mandibular palp, but differs from it and apparently from all other Caprellidæ in the shortness of the third joint of the palp, herein making an approach to the genus *Parvipalpus*, Mayer, in which the third joint is altogether wanting.

Between *Pseudoprotella* and *Deutella* there is one feature of distinction, which Dr. Mayer mentions, though he lays very little stress upon it, but which, in the absence of more striking differences, acquires some importance. This concerns the relation between the fourth, fifth, and sixth joints of the first gnathopods. In *Pseudoprotella* the fifth joint or wrist is elongate, so that the fourth joint is kept at a considerable distance from the hand, whereas in *Deutella* the wrist is so short that the fourth joint almost touches the base of the hand.

Deutella *Mayeri*, sp. n. (Pl. XV. A.)

The head is rounded and smooth, with the skull-like appearance familiar in *Caprella acanthifera*. The peræon is smooth, its third and fourth segments being the longest and equal to one another in length; the second segment deep in the front part, at which in both sexes the gnathopods are attached.

The eyes are round and black in the specimens preserved in spirit.

Upper Antennæ.—The second joint much longer than either the first or third, the first stouter but very little longer than the third; the flagellum having in the male six joints, of which the first is much the longest and carries four hyaline filaments, each of the others having but one. In the female the flagellum has five joints.

Lower Antennæ.—Much more slender than the upper, the peduncles of which they do not quite equal in length. The

fourth and fifth joints are equal to one another, and each is longer than the small two-jointed flagellum.

Mandibles.—The cutting-edge and secondary plate denticulate, the spine-row containing apparently not more than three spines, the molar tubercle prominent. The palp slight in structure, with the first joint not much shorter than the second and longer than the third, the third carrying only two or three short apical setæ.

Lower Lip.—The inner lobes comparatively large, the outer widely separated, the mandibular processes small.

First Maxillæ.—No distinct inner plate, the outer plate armed with five spines; the palp two-jointed, the large second joint carrying four setæ on its distal margin.

Second Maxillæ.—The inner and outer plates each distally armed with three spines, the inner having an additional one on its inner margin.

Maxillipeds.—The inner plates rather small, tipped with a few setæ, the outer plates reaching halfway along the second joint of the palp, and armed with two spines on the apex and two on the inner margin. The second joint of the palp the longest, the third ending in the pointed process which Mayer mentions as being found in several genera. The figure which Mayer gives of the maxilliped of his *Deutella venenosa* would serve for that of the present species.

First Gnathopods.—These are attached so far forward that the base of the maxillipeds appears behind them. The short wrist lies beside the fourth joint, which, as usual, to use Spence Bate's expression, overrides it. The hand is somewhat triangular, broadest at the base. The finger curves over the whole elongate palm and is pectinate within. In the larger specimens the finger, at least in the oblique view, appears to be to a trifling degree sinuous.

Second Gnathopods.—The second joint is equal in length to the hand; the third is rather longer than the fourth; the fifth is of insignificant size and coalescent with the large hand, which has at the base a backward directed process surmounted by a spine and one or two setules. The long front margin is very convex. In the female the hind margin is also convex, the long finger curving over it as far as the hollow formed between it and the above-mentioned process. In the male the hind margin is slightly concave, distally forming a small sharp tooth and ending squarely between this tooth and the hinge of the finger.

First and Second Pereopods.—The minute rudimentary limbs lie close to the bases of the branchial vesicles. The second joint of the limb is scarcely a third of the length of

the first joint, and is almost devoid of setules. The marsupial laminae in the female are large, with short filaments, chiefly, though not exclusively, on the first pair. The specimen figured had four large eggs in the slightly dehiscent marsupium.

Third, Fourth, and Fifth Peræopods.—These limbs are similar in structure, but the fourth are of larger size than the third and the fifth than the fourth. The hand is powerful, with a projection at the base, against which the long curved finger impinges. The basal process is followed by four or five of like character, but successively decreasing in size, along the inner margin. This form of hand is noticed by Mayer as occurring not only in *Deutella venenosa*, but also in the genera *Paracaprella* and *Hemiægina*.

The length of the male specimen is three-twentieths of an inch, the antennæ and limbs not being included. The females with eggs are rather shorter. A specimen from which the mouth-organs separately figured were dissected was smaller than the females; it had the appearance of being a young male.

The specific name is given out of respect to Dr. Paul Mayer, whose works on this branch of Crustacea can scarcely be too highly appreciated.

The specimens were taken from sand in shallow water at Antigua by Mr. W. R. Forrest. Since Mayer's *Deutella venenosa* was taken at Coquimbo, on the west coast of South America, along with *Caprella scaura*, Templeton, it may be worth mentioning as a coincidence that along with the present species Mr. Forrest sent also a specimen of *Caprella scaura*. Moreover, he sent a specimen which appears to belong without doubt to the species named *Æginella tristanensis* in the Report on the 'Challenger' Amphipoda. This species has since been referred by Dr. Mayer to a new genus, *Pseud-æginella*. The 'Challenger' specimen was destitute of all the last three pairs of peræopods: the specimen from Antigua has them all. In general appearance they are not very unlike those of *Deutella Mayeri*, though the inner margin of the head is simpler; but they have one character which is very unusual, namely, that the penultimate pair is notably larger than the ultimate. Additional specimens may hereafter show that this is only a casual variation.

EXPLANATION OF THE PLATES.

PLATES XIV. & XV. B.

Amphithoë megaloprotopus.

Lateral view of the animal; the natural size indicated by the line above. *a.s.*, upper antennæ; *a.i.*, portion of lower antennæ; *l.s.*, upper lip; *m, m*,

mandibles; *l.i.*, lower lip; *mx.* 1, one of the first maxillæ, and spines of the outer plate of the other more highly magnified; *m.xp.*, maxillipeds; *gn.* 1, first gnathopod; *gn.* 2, second gnathopod; *prp.* 1, 3, 4, 5, first, third, fourth, and fifth peræopods; *ur.* 1, 2, 3, first, second, and third uropods; *T.*, telson.

The mouth-organs and parts of the pleon are much more highly magnified than the antennæ and limbs.

PLATE XV. A.

Deutella Mayeri.

Lateral view of the female above, and of the male below, the natural size of the male being indicated by a line on the right.

os., the mouth-organs of the male specimen viewed laterally *in situ*. The palp of the mandible is seen overtopping the upper lip; the lower lip can be perceived almost edgewise below the molar tubercle of the mandible and above the palp of the first maxilla; between the latter and the prominent palp of the maxilliped are discerned the two plates of the second maxilla.

l.i., lower lip; *mx.* 1, first maxilla; *mx.* 2, second maxilla; *m.xp.*, maxillipeds; *gn.* 1, first gnathopod. This group is taken from a specimen smaller than either the male or female specimen figured on the plate.

a.s., upper antenna; *a.i.*, lower antenna; *gn.* 1, first gnathopod; *gn.* 2, second gnathopod; *prp.* 1, 2, 3, 5, first, second, third, and fifth peræopods.

The parts of the female are distinguished by the sign ♀, of the male by the sign ♂.

XLVII.—On a Group of the Aplysiidæ, with Description of a new Species. By J. GILCHRIST, Ph.D., &c.

[Plate XVIII.]

THE following description of a small group of Aplysias is a contribution to an account of the collection of Tectibranchs in the British Museum (Natural History). This collection contains a great number and variety of forms from the Pacific, Atlantic, and Indian Oceans, and illustrates very forcibly what could be done if a systematic search for these animals were made in almost any unexplored region. Owing to careful preservation and a liberal supply of spirit some of the specimens are in a good state of preservation and sufficient for purposes of identification.

The small group to be considered here is represented by half a dozen specimens, more especially by *Aplysia piperata* (Smith), from Thursday Island, Torres Straits ('Alert'